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COMPLETE SPECIFICATION

Closing arrangements for Bottles, Tubes, Jars, and the like Containers provided with a Peripheral Bead

I, ALFRED BAYETTO, an Italian Citizen, of 17 Boulevard de Belgique, Principality of Monaco, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

My invention has for its object a closure for bottles, jars and the like containers provided with a neck, comprising a cap of elastically deformable synthetic material including a central plug to be fitted inside the neck and a peripheral skirt adapted for engagement with the bead on the container neck and subdivided by spaced vertical slots into a plurality of outwardly projecting tongues which are urged against the underside of the neck bead through an outer annular member.

Now, according to my invention, said outer annular member urges downwardly the outer ends of the skirt tongues through direct contact therewith constituted by an annular member threadedly engaging the cap.

With the closing arrangement, which has just been described and which may be repeatedly used, the securing member prevents the closing cap from springing off the peripheral band of the container whereby it may resist an even considerable external pressure inside the container.

I have illustrated by way of example in accompanying drawings two embodiments of the closing arrangement for bottles, tubes, jars and the like containers provided with a peripheral bead, these embodiments being illustrated in axial cross sectional views. In said drawings:

Fig. 1 shows a first embodiment of the closing arrangement when released with reference to the container.

Fig. 2 shows the arrangement of Fig. 1 in its operative closing position.

Fig. 3 illustrates the second embodiment of the closing arrangement in its free condition.

Fig. 4 shows the arrangement of Fig. 50 in its closed condition.

In the closing arrangement according to Figs. 1 and 2, a dished closing cap is shown at 1c and is provided on its inner surface with a central cylindrical projection 3c in which is formed a recess 6c. The outer wall 7c of this closing cap, which is formed of synthetic elastic material such as polyvinyl chloride, polyethylene or the like, is provided with an outwardly projecting flange 8c extending upwardly, when released as shown in Fig. 1, along an angle of about 45° with reference to the axis of the arrangement. The lower section of the outer wall 7c and the flange 8c are subdivided by slots 9c into lugs.

At the upper end the outer wall 7c of the closing cap 1c is provided an outer thread 12c. A securing member is constituted by an annulus 2c provided with an inner tapping adapted to be screwed over the outer thread 12c of the closing cap 1c. In order to set said closing cap over the container, the annulus 2c is first unscrewed over the outer thread 12c of the closing cap until it releases completely (Fig. 1) the lugs formed in the lower section of the outer wall 7c and the flange 8c. Then being done, the closing cap 1c is urged onto the peripheral bead 5c of the neck 4c of the container until the edge of the neck 4c engages exactly the bottom of the closing cap. Now, if the annulus 2c is screwed down (Fig. 2) it urges the flange 8c into a flat condition and, consequently, the lugs formed by said flange and by the lower section of the outer wall 7c are urged inwardly against the lower section of the peripheral bead 5c; this results in that the closing cap 1c is urged

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still further onto the neck 4c of the container and is held fast on the latter. To open the container, the annulus 2c is unscrewed again until the lugs formed by the lower section of the outer wall 7c and by the flange 8c expand again outwardly whereupon the closing cap 1c may be removed from the neck of the container. The annulus 2c may be made as also the closing cap 1c by synthetic material or else by any other suitable material such as metal. The closing arrangement according to Figs. 3 and 4, includes also a dished closing cap 1d provided along its inner surface with a cylindrical central projection 3d which, in contradistinction with the precedingly described embodiment of the closing arrangement, is closed against the inside of the container to be stoppered and encloses a recess 6d directed towards the outside of the closing cap 1d. The outer wall 7d of the closing cap 1d is provided with a flange 8d directed outwardly through an angle of about 45° when released as shown in Fig. 3. The lower section of the outer wall 7d and the flange 8d are again subdivided in this embodiment of the closing arrangement by means of slits 9d into a plurality of lugs. The securing member is constituted in the present case by a dished cap 2d enclosing the outer wall 7d of the closing cap 1d. Said securing cap 2d is provided on its inner surface with a central cylindrical projection 13d having an outer thread as shown at 14d so that it may be screwed into a corresponding tapping of the outwardly opening recessed projection 3d of the closing cap 1d. The projection 13d on the cap 2d is provided with an outwardly opening recess 15d with a central opening in its bottom, through which an upright 16d formed on the bottom of the recess 6d in the projection 3d engages, which upright terminates with a head 17d. The head 17d of the upright 16d is obtained through a jumping of the upright 16d before the recess 15d is closed outwardly by an insert plate 18d which may be used for advertising purposes. In order to fit the closing cap 1d over the neck 4d of a container provided with a peripheral bead 5d, the securing cap 2d is first unscrewed with reference to the closing cap 1d until the head 17d of the upright 16d engages the bottom of the recess 15d in the projection 13d and thus prevents any further unwinding of the securing cap 2d. The flange of the cap 2d releases, therethrough the lower section of the outer wall 7d subdivided into flaps by the slits 9d and also the flange 8d as illustrated in Fig. 3. This being done, the closing arrangement is urged over the neck 4d of the container until the edge of

the neck 4d engages accurately the bottom of the closing cap 1d, whereupon a rotation of the securing cap 2d causes its projection 13d to engage the recess 6d in the projection 3d, so that said cap 2d engages to a further extent the closing cap 1d; thus the flange of the securing cap 2d urges the flange 8d of the closing cap 1d into a flattened condition and consequently, urges the flaps formed by the slits 9d inwardly against the lower surface of the peripheral bead 5d of the neck 4d; thus the closing cap is held still more energetically against the neck 4d. When the cap 2d is screwed off the closing cap 1d, it is possible to remove this closing arrangement without any difficulty from the neck 4d of the container. The cap 2d serving as a securing member may be made of synthetic material or of metal.

WHAT I CLAIM IS:—

1. A closure for bottles, jars and the like containers provided with a neck, comprising a cap of elastically deformable synthetic material including a central plug to be fitted inside the neck and a peripheral skirt adapted for engagement with the bead on the container neck and subdivided by spaced vertical slits into a plurality of outwardly projecting tongues which are urged against the underside of the neck bead through an outer annular member, characterized by the fact that said outer annular member urges downwardly the outer ends of the skirt tongues through direct contact therewith is constituted by an annular member threadedly engaging the cap.

2. A closure as claimed in Claim 1, wherein the annular member is constituted by a tapped ring engaging the tongues on the skirt when it is screwed down over the cap.

3. A closure as claimed in Claim 1, wherein the annular member threadedly engages a tapped inner depression formed in the cap plug through its central section and urges downwardly the projecting tongues of the cap through a smooth peripheral section sliding over the outside of the cap.

4. A closure as claimed in Claim 3, wherein the central section of the annular member is hollow and is capped by a removable insert while its lower edge is turned inwardly to engage the underside of an enlarged head formed on a centering projection rising above the center of the depression in the cap plug.

5. A closure for bottles, jars and the like containers of the type described substantially as described with reference to and as illustrated in the accompanying drawing.

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COMPLETE SPECIFICATION

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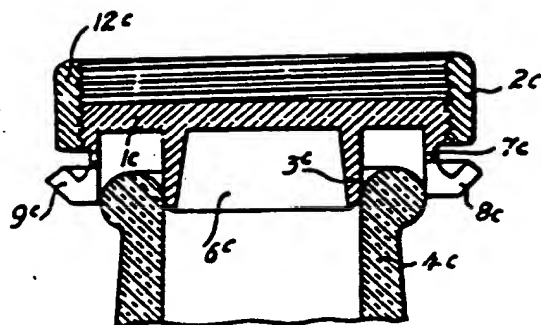


Fig. 1

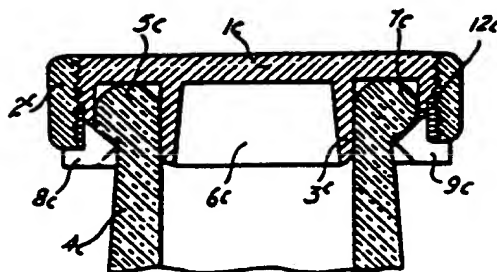


Fig. 2

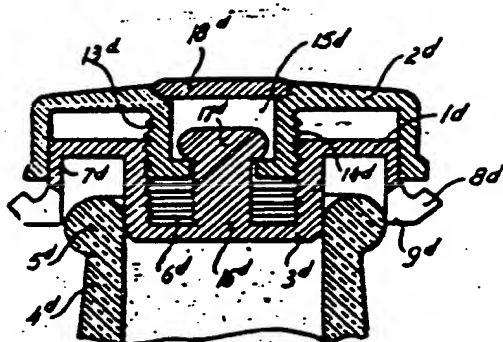


Fig. 3

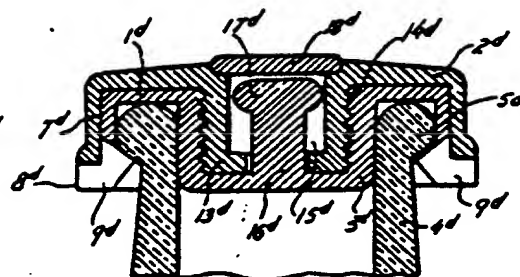


Fig. 4